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Payment Data, Platform Finance, and the Cross-Border Credit Gap for SMEs

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ABSTRACT

Digital payment infrastructures are increasingly central to how small and medium-sized enterprises seek liquidity, conduct trade, and establish financial credibility. Yet the benefits of digitalization remain uneven, especially in cross-border contexts where payment systems, data regimes, regulatory standards, and financing models remain fragmented. This article develops a four-layer conceptual framework linking payment infrastructure, data and access regimes, financing intermediation, and SME outcomes. Using Nigeria and Poland as illustrative comparative cases, the article examines how mobile-first, platform-centric ecosystems in emerging markets differ from bank-integrated, regulation-driven systems in developed European economies. The analysis shows that both models can support domestic SME financing through real-time payments, alternative data, and embedded credit. However, their capacity to enable cross-border SME finance depends on interoperability, data portability, legal recognition, and regulatory alignment. The article contributes to the literature by reframing digital payments as socio-technical information infrastructures rather than neutral settlement rails. It also offers a diagnostic framework for policymakers, central banks, FinTech firms, development institutions, and financial regulators seeking to design inclusive and interoperable SME finance ecosystems. The article concludes by proposing a research and policy agenda focused on open finance, cross-border data-recognition standards, SME usability, and infrastructure investment.

Keywords: digital payments, SME finance, cross-border payments, open banking, FinTech, interoperability, data portability, Nigeria, Poland, financial inclusion, embedded finance.

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1. INTRODUCTION

Small and medium-sized enterprises play a central role in employment creation, innovation, domestic production, and international trade. Across both developed and developing economies, SMEs account for a substantial share of firms and employment, yet they continue to face persistent financing constraints. These constraints are particularly severe in cross-border trade, where smaller firms encounter high transaction costs, slow settlement, foreign exchange uncertainty, weak credit histories, and complex compliance requirements. Compared with large multinational firms, SMEs often lack dedicated treasury departments, strong banking relationships, audited accounts, and collateral that can be used to access formal credit.

The global digitalization of payments has created new possibilities for addressing these constraints. Real-time payment systems, mobile money platforms, card networks, QR-code payments, API-enabled gateways, and open banking platforms have transformed how firms receive, store, and transmit value. More importantly, digital payments generate transactional data. These data can reveal sales frequency, cash-flow stability, customer relationships, seasonality, supplier payments, and repayment capacity. In principle, such information can reduce credit-market information asymmetries and help lenders assess SME creditworthiness without relying exclusively on collateral or audited financial statements.

This potential has been widely noted in studies of FinTech, alternative credit scoring, digital financial inclusion, and platform-based finance. Scholars have shown that digital financial technologies can expand access to credit, reduce monitoring costs, and enable new

forms of embedded finance (Philippon, 2016; Gomber et al., 2017; Frost et al., 2019; Cornelli et al., 2021; Gambacorta et al., 2023). Development institutions have also emphasized the role of digital payments in strengthening financial inclusion, resilience, and SME productivity (World Bank, 2022; IFC, 2021; OECD, 2021). However, the relationship between digital payment infrastructure and SME finance is neither automatic nor uniform. The existence of digital transactions does not necessarily mean that SMEs can use their payment histories to access credit, particularly across borders.

This article argues that the uneven benefits of digital payment systems arise from differences in institutional design, infrastructure architecture, data governance, regulatory alignment, and market organization. Digital payments should therefore be understood not merely as technical rails for moving money, but as socio-technical information infrastructures that structure the production, ownership, circulation, and interpretation of financial data.

To develop this argument, the article proposes a four-layer framework consisting of:

1. Payment infrastructure
2. Data and access regimes
3. Financing intermediation
4. SME outcomes and cross-border functionality

The framework is illustrated through a comparative discussion of Nigeria and Poland. Nigeria represents a mobile-first, FinTech-led, platform-centric ecosystem where digital payments have expanded rapidly but remain fragmented across providers. Poland represents a bank-integrated and regulation-driven European system shaped by SEPA, PSD2, GDPR, BLIK, and broader EU financial infrastructure. These two cases demonstrate that while domestic digital finance can evolve in different institutional environments, cross-border SME finance remains constrained when payment data cannot travel across platforms, jurisdictions, and regulatory regimes.

The article addresses the following research questions:

1. How do digital payment infrastructures influence SME access to finance?
2. How do data governance and access regimes shape the financial usefulness of payment data?
3. Why do domestic digital payment innovations often fail to translate into effective cross-border SME finance?
4. What institutional, regulatory, and infrastructural conditions are required to make digital payment data portable, interoperable, and financeable across borders?

The article makes three main contributions. First, it contributes to digital payment and information-systems literature by conceptualizing payment infrastructures as data-generating socio-technical systems. Second, it contributes to SME finance literature by explaining how digital transaction data may reduce information asymmetry and collateral dependency. Third, it contributes to cross-border financial inclusion debates by identifying interoperability and data portability as central conditions for inclusive SME finance.

2. LITERATURE REVIEW AND THEORETICAL FOUNDATIONS

2.1 SME Finance, Information Asymmetry, and Collateral Constraints

The traditional literature on SME finance emphasizes two structural barriers: information asymmetry and lack of collateral. SMEs often operate with limited accounting records, short credit histories, informal business practices, and weak documentation. As a result, lenders face high screening and monitoring costs. Classic theories of credit rationing show that when lenders cannot accurately distinguish between high-risk and low-risk borrowers, they may restrict credit even to potentially viable firms (Stiglitz & Weiss, 1981). Relationship banking can partially reduce these information problems, but it may also exclude younger, smaller, informal, or cross-border firms without established banking histories (Berger & Udell, 2006; Beck, Demirgüç-Kunt, & Maksimovic, 2008; Beck et al., 2018).

Cross-border SME finance intensifies these problems. A lender in one jurisdiction may lack access to reliable information about an SME buyer or seller in another jurisdiction. Legal enforcement may be difficult, credit registries may not communicate, payment data may not be recognized, and compliance standards may differ. Consequently, SMEs engaged in international trade often face higher financing costs, delayed settlement, and limited access to working capital or trade finance.

2.2 Digital Payments as Data-Generating Infrastructure

Digital payment systems alter this landscape by converting economic activity into machine-readable records. A digital payment leaves a trace: amount, time, counterparty, channel, location, and frequency. Over time, such records generate a dynamic profile of business activity. These payment data can become valuable inputs for credit scoring, invoice financing, supply-chain finance, fraud detection, tax compliance, and business analytics.

This view aligns with the broader information-systems literature, which treats platforms and infrastructures as socio-technical arrangements rather than neutral technologies (Hanseth & Lyytinen, 2010; Tiwana, Konsynski, & Bush, 2010; de Reuver, Sørensen, & Basole, 2018). Digital infrastructures are shaped by standards, governance rules, APIs, institutional

incentives, and user practices. Their effects depend not only on technical capacity but also on who controls access, how data are governed, and whether systems can interoperate.

In financial services, this insight is especially important. A fast payment system may reduce settlement time, but its developmental value for SMEs depends on whether transaction data can be accessed, verified, shared, and used for financing. As Gambacorta et al. (2023) argue, alternative data can substitute for collateral in FinTech lending when lenders can reliably process transaction histories. Similarly, Cornelli et al. (2021) show that FinTech and big-tech credit rely heavily on digital footprints and platform data. However, the same data can also create concentration risks, platform dependency, privacy concerns, and exclusion where governance is weak (Zetzsche et al., 2020; Arner, Barberis, & Buckley, 2017).

2.3 Open Banking, Data Portability, and Embedded Finance

Open banking and open finance represent regulatory attempts to make financial data more portable and contestable. In the European Union, PSD2 requires banks to provide regulated third-party providers with access to customer account data, subject to consent and security standards. GDPR strengthens the legal basis for data protection and data rights. Together, these frameworks create conditions under which SMEs can authorize data sharing across providers.

Open banking can support SME finance by enabling lenders to access real-time cash-flow data, automate affordability assessments, and integrate credit with accounting and payment systems. It may also increase competition by allowing non-bank providers to develop services around bank-held data. However, open banking does not automatically solve cross-border challenges. Even within advanced regulatory environments, differences in API standards, licensing, liability rules, digital identity systems, and anti-money-laundering requirements can limit data usability across jurisdictions.

In emerging markets, digital finance often develops through mobile money systems, payment service banks, super-apps, agency networks, and FinTech platforms rather than through bank-led open banking mandates. These systems can expand inclusion rapidly, especially among informal and underbanked enterprises. Yet platform-centric models may generate data silos. SMEs may accumulate valuable transaction histories within a wallet, payment gateway, or e-commerce platform, but may be unable to transfer those records to another lender or foreign trading partner.

2.4 Cross-Border Payments and the Interoperability Problem

Cross-border payments remain slower, more expensive, and less transparent than domestic payments. The Financial Stability Board and Bank for International Settlements have identified high costs, limited access, lack of transparency, and slow settlement as persistent barriers in international payments (BIS, 2020; FSB, 2020). These barriers particularly affect SMEs because they conduct smaller-value transactions and cannot negotiate preferential banking arrangements.

Interoperability is therefore central. It refers not only to technical connectivity between payment systems, but also to the compatibility of legal rules, messaging standards, identity verification, compliance processes, foreign exchange arrangements, and data-sharing protocols. Without interoperability, domestic digital transformation may create islands of efficiency that fail to connect globally.

3. METHODOLOGY

3.1 Research Design

This article adopts a conceptual and comparative case-study methodology. The objective is not to test a causal hypothesis statistically, but to develop and refine an analytical framework that explains how digital payment infrastructures shape SME finance outcomes across different institutional settings.

A conceptual research design is appropriate because the relationship between digital payments, data governance, embedded finance, and cross-border SME inclusion remains under-theorized. Existing studies often examine individual components, such as mobile money adoption, open banking regulation, FinTech lending, or cross-border payment costs. Fewer studies integrate these components into a multi-layer framework that connects infrastructure, data access, financing intermediation, and SME outcomes.

The article therefore uses theory-building logic. It synthesizes insights from information-systems theory, SME finance, FinTech regulation, and development finance to construct a four-layer framework. The framework is then illustrated through two comparative cases: Nigeria and Poland.

3.2 Case Selection

Nigeria and Poland were selected using a most-different systems logic. The two countries differ significantly in financial structure, regulatory environment, level of economic development, regional integration, and payment ecosystem design.

Nigeria was selected because it represents a large emerging-market economy with rapid digital-payment growth, strong FinTech innovation, extensive mobile and agent-based financial services, and persistent challenges around informality, data fragmentation, and cross-border recognition.

Poland was selected because it represents a developed European economy with a highly bank-

integrated digital payment system, strong domestic adoption of digital payments, participation in EU financial regulation, and integration into SEPA and broader European payment infrastructure.

The contrast between Nigeria and Poland allows the article to examine how different institutional configurations affect the translation of payment data into SME finance. The cases are not intended to represent all emerging and developed economies. Rather, they serve as theoretically useful examples for identifying mechanisms that may be relevant across other contexts.

3.3 Data Sources

The article relies on secondary data and document analysis. Sources include:

1. Academic literature on SME finance, digital payments, FinTech lending, open banking, and information systems.
2. Reports from international organizations, including the BIS, FSB, World Bank, OECD, IFC, UNCTAD, and GSMA.
3. Central bank and regulatory documents from Nigeria, Poland, and the European Union.
4. Industry reports on payment systems, mobile money, open banking, BLIK, SEPA, and embedded finance.
5. Prior scholarly work by the author [Author's own work, Year], where relevant to digital finance, SME finance, financial inclusion, or payment infrastructures.

3.4 Analytical Procedure

The analysis proceeded in four stages.

First, the literature was reviewed to identify recurring themes in digital payments and SME finance. These included transaction-data generation, information asymmetry, platform governance, open banking, embedded finance, and cross-border payment frictions.

Second, these themes were organized into four analytical layers: payment infrastructure, data and access regimes, financing intermediation, and SME outcomes.

Third, the Nigeria and Poland cases were examined across each layer to identify similarities, differences, and bottlenecks.

Fourth, cross-case comparison was used to refine the framework and identify policy implications. Particular attention was given to points of misalignment between domestic digital finance systems and cross-border financial inclusion.

3.5 Limitations

The study is conceptual and illustrative rather than econometric. It does not measure the causal effect of digital payment adoption on SME credit access using firm-level data. The analysis is also limited by the availability and comparability of secondary sources. Future studies could test the framework empirically using SME surveys, transaction-level payment data, lender records, credit registry data, and cross-border trade-finance datasets.

Despite these limitations, the methodology is suitable for developing a structured framework that can guide future empirical research and policy design.

4. Conceptual Framework: The Four-Layer Model

This article proposes a four-layer framework for understanding how digital payment infrastructures influence SME finance.

4.1 Layer One: Payment Infrastructure

The first layer consists of the technical and institutional systems that enable digital transactions. These include real-time payment systems, bank transfers, mobile money platforms, card networks, QR-code systems, payment gateways, agent networks, and cross-border settlement arrangements.

Payment infrastructure determines the speed, cost, accessibility, reliability, and reach of transactions. For SMEs, infrastructure quality affects whether customers can pay easily, whether suppliers can be settled quickly, and whether transaction histories are digitally recorded.

However, infrastructure alone is insufficient. A country may have fast domestic payments but weak cross-border capabilities. Similarly, payment channels may be widely used but fragmented across competing wallets or platforms. The key issue is therefore not merely digital adoption, but interoperability.

4.2 Layer Two: Data and Access Regimes

The second layer concerns the rules and standards governing payment data. It includes data ownership, consent, privacy, API standards, data portability, digital identity, cybersecurity, and legal recognition of electronic records.

This layer determines whether transaction data can be converted into a usable financial asset. If payment data remain locked within platforms, SMEs may be unable to use them to obtain credit from alternative providers. If data are portable and legally recognized, SMEs can use their payment histories as evidence of business performance.

Open banking and open finance are especially important in this layer. They create institutional mechanisms through which SMEs can authorize data sharing. However, data portability must be supported by trust frameworks, standardized APIs, liability rules, and cross-border recognition.

4.3 Layer Three: Financing Intermediation

The third layer concerns the actors and business models that transform payment data into financial

products. These include banks, FinTech lenders, payment gateways, mobile money operators, big-tech platforms, invoice-finance providers, supply-chain finance platforms, and trade-finance institutions.

Digital payment data can support financing in several ways:

1. Cash-flow lending
2. Merchant cash advances
3. Invoice financing
4. Supply-chain finance
5. Embedded working-capital loans
6. Dynamic credit limits
7. Alternative credit scoring

The effectiveness of these models depends on the quality, continuity, and verifiability of payment data. It also depends on regulatory permission, consumer protection, risk management, and interoperability with credit registries and compliance systems.

4.4 Layer Four: SME Outcomes and Cross-Border Functionality

The fourth layer captures the real-world effects on SMEs. Relevant outcomes include:

1. Lower transaction costs
2. Faster settlement
3. Improved cash-flow management
4. Greater access to credit
5. Lower collateral dependency
6. Improved financial visibility
7. Increased resilience
8. Expanded participation in cross-border trade

Cross-border functionality is the ultimate test of system coherence. A digital finance ecosystem may function well domestically but fail internationally if payment data, identity credentials, compliance checks, and credit signals cannot travel across jurisdictions.

5. Nigeria: Mobile-First Innovation and Platform Fragmentation

Nigeria has one of Africa's most dynamic digital finance ecosystems. The country has experienced rapid growth in mobile payments, bank transfers, agent banking, USSD-based services, payment gateways, and FinTech platforms. Firms such as Flutterwave, Paystack, Moniepoint, Kuda, OPay, and PalmPay have contributed to the expansion of digital transactions for merchants and consumers. The Nigeria Inter-Bank Settlement System has also played an important role in real-time bank transfers and payment switching. For Nigerian SMEs, especially micro and informal enterprises, digital

payments can improve recordkeeping, customer reach, cash-flow visibility, and access to working capital. Payment gateways and wallets generate transactional histories that can be used by FinTech firms for alternative credit assessment. Embedded finance models can offer short-term loans based on sales performance rather than collateral.

However, Nigeria's ecosystem also illustrates the limits of platform-centric development. Payment data are often fragmented across banks, wallets, gateways, agency networks, and mobile applications. SMEs may maintain several payment channels to serve different customers, causing their financial records to be dispersed. Without robust open finance standards and data portability rules, these records may not be easily transferable to other lenders or foreign institutions.

This creates a paradox. The Nigerian ecosystem may generate rich digital payment data, but the data may remain locked within proprietary platforms. As a result, SMEs may benefit from domestic embedded finance while still struggling to use their payment histories in cross-border credit markets.

6**. Poland: Bank Integration, Regulation, and the Regional Boundary of Interoperability**

Poland provides a contrasting model. Its digital payment ecosystem is strongly integrated with the banking sector and the European regulatory environment. Poland participates in SEPA and is influenced by EU-wide regulations such as PSD2 and GDPR. Domestically, BLIK has become a highly successful payment system, allowing users to authorize payments through banking applications. The system has achieved strong adoption in e-commerce, peer-to-peer payments, retail transactions, and public services.

For Polish SMEs, this bank-integrated infrastructure provides reliable domestic payment services, efficient reconciliation, and compatibility with accounting and banking tools. Open banking enables regulated third-party providers to access account data with consent, supporting credit analytics, invoice finance, and cash-flow-based lending.

However, Poland's strengths are partly regional. Within the EU, Polish SMEs benefit from harmonized rules, SEPA payment standards, and relatively strong data protection frameworks. Outside Europe, these advantages become less effective. A Polish exporter trading with an African or Asian buyer may still rely on correspondent banking, face high foreign exchange spreads, encounter delayed settlement, and lack access to reliable buyer data.

Thus, Poland illustrates a different form of limitation. Its system is not primarily fragmented domestically; rather, it faces a cross-border boundary where EU-based interoperability does not extend fully to non-European markets.

7. Comparative Analysis

The Nigeria and Poland cases reveal two different but related models of digital payment development.

Layer	Nigeria	Poland
Payment infrastructure	Mobile-first, FinTech-led, rapidly expanding, but fragmented	Bank-integrated, SEPA-connected, BLIK-enabled, highly standardized
Data and access regime	Platform-centric data, limited portability, emerging open finance	PSD2/GDPR-based, consent-driven, API-enabled
Financing intermediation	Embedded finance, alternative credit scoring, platform-based lending	Bank–FinTech partnerships, open-banking credit, invoice finance
SME domestic outcomes	Greater inclusion, improved payment acceptance, new credit channels	Efficient reconciliation, lower domestic friction, structured credit access
Cross-border limitation	Weak recognition of local data abroad	Strong intra-EU reach but weaker interoperability beyond Europe

The comparison shows that domestic digital-payment success does not automatically produce cross-border SME finance inclusion. Nigeria's challenge is primarily data fragmentation and weak portability. Poland's challenge is primarily regional containment and limited global interoperability. Both cases therefore support the article's central claim: cross-border SME finance requires more than digital payments. It requires interoperable infrastructures, portable data, recognized digital identities, compatible compliance standards, and trusted financing intermediaries.

8. DISCUSSION

8.1 Digital Payments as Trust-Producing Systems

Digital payments are often discussed in terms of speed, convenience, and cost. This article argues that their deeper importance lies in their ability to produce trust. For SMEs, each transaction can become a signal of reliability, revenue continuity, market demand, and repayment capacity. These signals can help overcome long-standing information asymmetries in credit markets.

However, trust is not produced automatically by data. Data must be standardized, verifiable, portable, and institutionally recognized. A payment history that is meaningful to one platform may be meaningless to a foreign bank if it lacks recognized format, legal validity, or compliance compatibility.

8.2 The Cross-Border Ceiling

The analysis identifies what may be called a cross-border ceiling. This occurs when domestic digital finance systems improve payments and credit access within national or regional boundaries but fail to support SMEs beyond those boundaries.

The cross-border ceiling is caused by misalignment across the four layers:

1. Payment systems may not connect.
2. Data standards may differ.
3. Consent and privacy regimes may be incompatible.
4. Lenders may not recognize foreign transaction histories.
5. Compliance systems may not share digital identity or KYC information.
6. Legal enforceability may be uncertain.

This ceiling prevents SMEs from fully benefiting from digitalization in international trade.

8.3 Inclusion and Risk

Digital finance can increase inclusion, but it also creates risks. Platform-based lending may lead to over-indebtedness, opaque algorithmic scoring, discriminatory credit decisions, data extraction, and dependency on dominant platforms. Open banking may increase competition but also create cybersecurity, consent fatigue, and liability risks. Therefore, the policy objective should not be digitalization alone, but responsible interoperability.

9. Policy Implications

1. Develop Open Finance Standards: Emerging markets should move beyond isolated platform data and develop open finance frameworks that allow SMEs to share payment, wallet, bank, tax, and e-commerce data securely with authorized providers.
2. Promote Wallet–Bank–FinTech Interoperability: Regulators should require interoperability between banks, wallets, payment gateways, and mobile money providers. This would reduce fragmentation and allow SMEs to consolidate their financial histories.
3. Build Cross-Border Data-Recognition Pilots: Countries and regional blocs should develop pilot programs that allow SME payment histories from one jurisdiction to be recognized by lenders in another. For example, EU–Africa data-recognition pilots could test whether Nigerian merchant payment data can support credit assessment by European trade-finance providers.
4. Standardize Digital Identity and KYC Frameworks: Cross-border SME finance requires reliable digital identity and business verification. Policymakers should invest in interoperable digital identity systems,

beneficial ownership registries, and risk-based KYC standards.

5. Support SME-Centered Design: Digital finance systems should be designed around SME usability. Many small firms lack the technical capacity to manage APIs, consent dashboards, multiple wallets, or complex financing platforms. Interfaces should be simple, multilingual, mobile-friendly, and integrated with accounting tools.
6. Strengthen Consumer and SME Data Protection: Data portability must be balanced with privacy, cybersecurity, and fair lending safeguards. Regulators should require transparency in algorithmic credit scoring and establish mechanisms for dispute resolution.

10. Research Agenda

Future research should empirically test the four-layer framework. Several directions are especially important.

First, researchers should examine whether improvements in payment infrastructure lead to better SME finance outcomes only when data access regimes are strong. This could be tested using panel data on payment adoption, SME loan access, and regulatory changes.

Second, studies should investigate cross-border data portability. Experimental pilots could assess whether transaction histories from one country improve credit decisions in another.

Third, researchers should examine SME user experience. Ethnographic and survey-based studies could explore how small firms understand consent, data sharing, embedded credit, and digital identity.

Fourth, comparative studies should examine the risks of platform dependency. In emerging markets, platform-based lending may expand access but also concentrate power over SME data.

Fifth, future research should explore the relationship between digital payments and trade resilience. During shocks, such as pandemics or currency crises, SMEs with digital payment histories may be better positioned to access emergency credit.

11. CONCLUSION

Digital payments are no longer merely instruments for moving money. They are infrastructures for producing financial information, creating trust, and shaping access to credit. For SMEs, every digital transaction can become evidence of commercial activity, repayment capacity, and business resilience. Yet this evidence becomes valuable only when it is accessible, portable, and recognized by financial institutions.

The comparison between Nigeria and Poland shows that different digital payment models generate different opportunities and constraints. Nigeria's mobile-first and FinTech-led ecosystem has expanded domestic inclusion but faces fragmentation and weak data portability. Poland's bank-integrated and regulation-driven ecosystem provides strong domestic and intra-European functionality but remains limited when Polish SMEs trade beyond Europe.

The central challenge is therefore not simply to build faster payment systems. It is to build interoperable and trustworthy financial infrastructures that allow payment data to travel across platforms, institutions, and borders. Without interoperability, infrastructure remains local. Without data portability, transaction histories remain trapped. Without regulatory alignment, digital trust cannot become cross-border finance.

The four-layer framework developed in this article provides a diagnostic tool for understanding where digital payment systems succeed and where they fail. It can help policymakers, regulators, FinTech providers, banks, and development institutions identify bottlenecks in SME finance ecosystems and design more inclusive cross-border solutions.

REFERENCES

- Ayyagari, M., Beck, T., & Demirgüç-Kunt, A. (2007). Small and medium enterprises across the globe. *Small Business Economics, 29*, 415–434.
- Arner, D. W., Barberis, J., & Buckley, R. P. (2017). FinTech, RegTech, and the reconceptualization of financial regulation. *Northwestern Journal of International Law & Business, 37*(3), 371–413.
- Bank for International Settlements. (2020). *Enhancing cross-border payments: Building blocks of a global roadmap*. BIS.
- Beck, T., Demirgüç-Kunt, A., & Maksimovic, V. (2008). Financing patterns around the world: Are small firms different? *Journal of Financial Economics, 89*(3), 467–487.
- Berger, A. N., & Udell, G. F. (2006). A more complete conceptual framework for SME finance. *Journal of Banking & Finance, 30*(11), 2945–2966.
- Borgogno, O., & Colangelo, G. (2020). Data sharing and interoperability: Fostering innovation and competition through APIs. *Computer Law & Security Review, 37*, 105314.
- Brummer, C., & Yadav, Y. (2019). FinTech and the innovation trilemma. *Georgetown Law Journal, 107*, 235–307.
- Claessens, S., Frost, J., Turner, G., & Zhu, F. (2018). FinTech credit markets around the world: Size, drivers and policy issues. *BIS Quarterly Review*, September, 29–49.
- Cornelli, G., Frost, J., Gambacorta, L., Rau, R., & Wardrop, R. (2021). FinTech and big tech credit: A new database. *BIS Working Papers*, No. 887.

- de Reuver, M., Sørensen, C., & Basole, R. C. (2018). The digital platform: A research agenda. *Journal of Information Technology, 33*(2), 124–135.
- European Banking Authority. (2022). *Report on the use of digital platforms in the EU banking and payments sector*. EBA.
- Financial Stability Board. (2020). *Enhancing cross-border payments: Stage 3 roadmap*. FSB.
- Frost, J., Gambacorta, L., Huang, Y., Shin, H. S., & Zbinden, P. (2019). BigTech and the changing structure of financial intermediation. *Economic Policy, 34*(100), 761–799.
- Gambacorta, L., Huang, Y., Qiu, H., & Wang, J. (2023). Data versus collateral. *Review of Finance, 27*(2), 369–398.
- Gawer, A. (2014). Bridging differing perspectives on technological platforms. *Research Policy, 43*(7), 1239–1249.
- Gomber, P., Koch, J. A., & Siering, M. (2017). Digital finance and FinTech: Current research and future research directions. *Journal of Business Economics, 87*, 537–580.
- Hanseth, O., & Lyytinen, K. (2010). Design theory for dynamic complexity in information infrastructures. *Journal of Information Technology, 25*(1), 1–19.
- International Finance Corporation. (2021). *Digital financial services for MSMEs*. IFC.
- Nzomiwu, A.C. (2025). Regulating the Unregulated: Governance Models for Decentralized Autonomous Organizations (DAOs) in Financial Markets. *SSRN Electronic Journal*.
- Nzomiwu, A.C., Okoye, F., & Uzondu, S. (2025). Concept-Based AI (LLMs) vs. Token-Based Language Models (LCMs): The Philosophical Divide. *SSRN Electronic Journal*.
- Nzomiwu, A.C., & Okoye, F. (2025). Monetary Systems and Financial Infrastructure: A Reshaping with the use of Digital Asset Tokenization and Decentralized Finance. *SSRN Electronic Journal*.
- OECD. (2021). *OECD SME and Entrepreneurship Outlook 2021*. OECD Publishing.
- Petersen, M. A., & Rajan, R. G. (1994). The benefits of lending relationships: Evidence from small business data. *Journal of Finance, 49*(1), 3–37.
- Philippon, T. (2016). The FinTech opportunity. *NBER Working Paper No. 22476*.
- Stiglitz, J. E., & Weiss, A. (1981). Credit rationing in markets with imperfect information. *American Economic Review, 71*(3), 393–410.
- Tiwana, A., Konsynski, B., & Bush, A. A. (2010). Platform evolution. *Information Systems Research, 21*(4), 675–687.
- UNCTAD. (2022). *Digital Economy Report 2022: Cross-border data flows and development*. United Nations.
- World Bank. (2022). *Digitalizing trade and payments for SMEs in developing countries*. World Bank.
- Yoo, Y., Henfridsson, O., & Lyytinen, K. (2010). Research commentary: The new organizing logic of digital innovation. *Information Systems Research, 21*(4), 724–735.
- Zetzsche, D. A., Arner, D. W., Buckley, R. P., & Weber, R. H. (2020). The future of data-driven finance and RegTech. *European Business Organization Law Review, 21*, 303–340.